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ECONOMICS**The CIA's goof in assessing the Soviets****The agency seriously miscalculated how defense fits into Russia's economy**

Through three decades of the cold war, U.S. policy planners have repeatedly faced crises in which it was vitally important to gauge both the size of the Soviet defense effort and the nature of its military capabilities. Their security blanket at such times was the reputation of a group of Central Intelligence Agency analysts—including hundreds of economists—who were presumed to have an unmatched degree of expertise on how defense fits into the Soviet economy.

Each of the armed services always had—and still has—its own intelligence establishment. But the CIA's Sovietologists steadily gained ground at the expense of other intelligence agencies mainly because only the CIA had the vast store of data and sheer analytic manpower needed to integrate jigsaw bits of information into a coherent picture of the war-making capabilities of the Soviet economy.

For at least a decade, there have been critics who argued that the CIA's model of the Soviet economy was a hopelessly complex superstructure that bore little relation to reality—an example of secret research gone wild. Yet for years the sheer weight of the resources devoted to the CIA's Soviet project allowed the agency to carry the day.

But as Admiral Stansfield Turner—President Carter's second nominee for the sensitive position of CIA director—approaches his confirmation hearings, a pall has fallen over the agency's presumed Soviet expertise. The CIA's Soviet picture has now been found to be incredibly distorted, to an extent far beyond agency's admissions thus far.

The hearings. With the Carter Administration trying to move beyond existing nuclear arms treaties with the Soviet Union, toward both nuclear and conventional arms reduction, it now appears that at least four congressional committees will soon examine the intelligence communities' views on Soviet defense. Some of the most disturbing points raised will center on the CIA's economic analysis.

By the agency's own admission, it has seriously underestimated the level of Soviet defense spending. During his May, 1976, presentation to Congress, George Bush, the agency's director at

the time, acknowledged that the CIA's current estimate of 50 billion to 55 billion rubles for Soviet defense outlays in 1975 was "about twice" the agency's earlier estimate. But throughout the hearings, the joint subcommittee on priorities, headed by Senator William Proxmire (D-Wis.), accepted agency assurances that virtually the only error had to do with the Soviet Union's efficiency in producing military hardware, and not with the quantity or quality of that hardware.

What the CIA has not yet disclosed, however, is that the agency's earlier estimate of Soviet weapons spending was far worse than its estimate of overall Soviet defense spending (chart). The current CIA figures for Soviet military investment outlays are about 400% of their previous level. During the agency's congressional presentation in 1974—the last one prior to the agency's massive revision of the Soviet figures—William E. Colby, then CIA director, told the Proxmire subcommittee that "expenditures devoted to [military] investment [procurement of hardware and construction of facilities] have dropped from about 40% of total defense expenditures in 1960 to about 20% in 1972." But the CIA's current revision says: "Since 1970, investment outlays have taken about 40%" of total Soviet defense spending. Thus, the agency has not only doubled its total estimate of Soviet outlays during the 1970s, it has doubled procurement's share of that total.

The agency's explanations so far are not adequate to account for the fourfold increase in the estimated cost of Soviet weaponry. This creates a strong presumption that the error was not limited to the CIA's underestimate of ruble prices in the Soviet defense sector. Quite possibly, more fundamental errors are involved, such as underestimating the quantity or performance capabilities, or both, of Soviet weapons systems.

The Soviet pattern. The current CIA data also suggest a pattern of Soviet behavior that is strongly at odds with earlier views. Until the recent revision of Soviet defense spending, CIA figures showed a marked decline in the share of Soviet gross national product devoted to military purposes—to about 6% in the mid-1970s from about 12% in the mid-1950s. The CIA now says this military "burden" has been flat or declining within the 11%-to-13% range between 1970 and 1975, although the agency has not had time to produce consistent figures for previous years.

But critics suspect that the agency's inability to reconstruct earlier Soviet defense data reflects methodological problems that continue to produce underestimates. And some experts suggest that the Soviet military burden has actually continued on a steadily rising course—to a 1975 GNP share of 14% to 15% from a 1960 level of 8% to 9%. This would mean that the Soviets have been placing an increasingly high priority on military strength at the very time when the superpowers were supposedly ushering in a new period of détente.

The evidence. Little is known about the reasons for the CIA's abrupt about-face in its assessment of the Soviet defense effort, but BUSINESS WEEK's investigation suggests that two distinct adjustments were involved.

In late 1974 or early 1975 the CIA's adamancy began to erode under the weight of mounting evidence advanced aggressively by outside critics and top officials of competing intelligence agen-

New proof that Russia boosted military spending while talking détente

cies in the State Dept. and the Pentagon. This evidence included cost data obtained covertly for specific defense items, including shipbuilding, that were at variance with the CIA's figures: unexpected sophistication of Soviet weaponry captured by the Israelis during the 1973 Mideast war; and statements made to undisclosed official Soviet bodies by Communist Party Secretary General Leonid I. Brezhnev and by Premier Alexei Kosygin.

At this point, a joint CIA-Defense Intelligence Agency (DIA) task force was convened to review all available information, including some culled from the intelligence services of other NATO countries. The resulting consensus appears to have involved a massive upgrading of the presumed quantity or quality of Soviet weaponry, since the procurement share of total estimated military outlays was doubled back to the 40% level of 1960. At the same time, figures for other outlays were trimmed, so the total defense figure remained at about 6% of GNP, with the agency conceding that if a variety of estimation factors had all tended toward the low side, the true figure could range as high as 8%.

The breakthrough. So as matters rested in early 1975, the CIA's assessment for total Soviet defense outlays was about 27 billion rubles. But by June 19, 1975—the

opening of the CIA's annual presentation to Congress—the agency's estimates of the percent of Soviet GNP devoted to the military were in total disarray, and the agency was excused from discussing them. What had happened was that an analyst from the CIA and one from the DIA had wangled permission to "go into the field" in a long-shot attempt to get classified Soviet assessments of their own defense costs. What they came up with was irrefutable evidence that the CIA's overall figure for 1970 had been only about half as high as it should have been.

Even then, according to Lieutenant General Daniel O. Graham, a former DIA director, it was only through the intercession of former Defense Secretary James R. Schlesinger that the CIA's SCAM (Soviet Costing Analytic Model) was finally called to task. "They all wanted to squelch the evidence," he says, "and impugn the credibility of very good evidence on what the Soviets consider their own defense costs to be." But Schlesinger, an economist and former Rand Corp. specialist on national security, insisted on the review procedure that ended by certifying the authority of the covertly obtained documentation. "If it wasn't for that," Graham says, "we'd still be stuck with the same ridiculous figures."

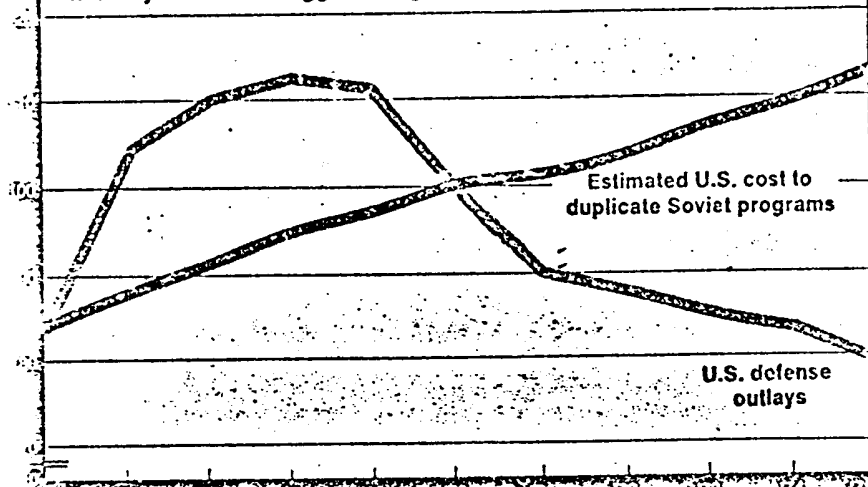
Once certified as trustworthy, the new evidence, which amounted to an unprecedented intelligence breakthrough, struck the CIA like a thunderbolt. "I doubt we could ever have caught this by economic analysis," one analyst says. But another agency official reacts defensively: "You don't make a change every time you get a small piece of evidence. If you change every year, people are going to start criticizing. That's a bureaucratic norm."

The question remains, however, whether the agency's analysts have any deeper understanding of Soviet developments than they did prior to the revision. BUSINESS WEEK's findings do not preclude the possibility that agency estimates were, in essence, just doubled across the board to achieve agreement with the overall defense figure obtained by the two analysts who went covert. In other words, the agency may have no firmer grasp on the proportions of Soviet defense costs than it did in 1974, when it thought procurement accounted for only 20% of the total. And it may have no sounder conception of the dynamics of Russia's military burden than it did two years ago, when it said it accounted for only 6% of Soviet GNP.

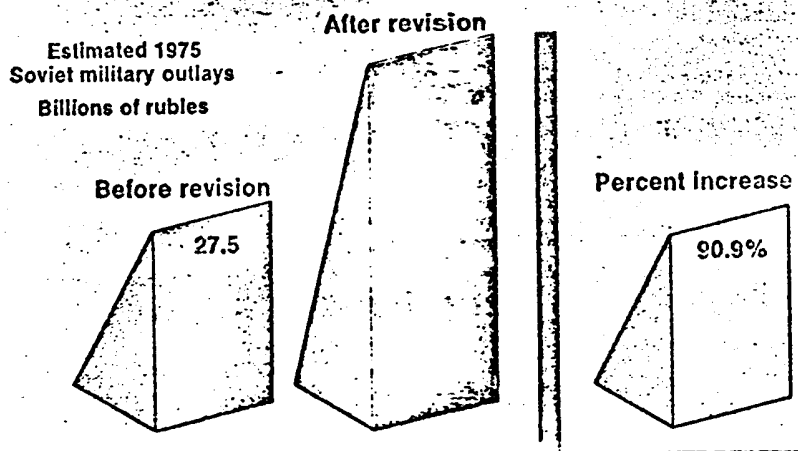
The civilian sector. This kind of uncertainty is troubling not only to experts in strategic studies but also to those whose interests span the entire Soviet economy. The whole point of the military "burden" calculation is that whatever goes into mili

CIA's estimate of Soviet military outlays

Even before latest revisions, their dollar estimates showed that the Soviet military effort was bigger and growing faster than that of the U.S.



But now, the CIA has drastically increased its estimate of Soviet defense costs in rubles



And more than 60% of the total 1975 error arose from undershooting the estimate for weapons procurement and construction

	Before revision Billions of rubles	After revision Billions of rubles	Percent Increase
Research, development, testing, and evaluation	9.2	10.0	8.7%
Troop pay, food, and personal equipment	8.5	10.5	23.5%
Replacement, maintenance, and operating costs	4.3	11.0	155.8%
Weapons procurement and construction of military installations	5.5	21.0	281.8%
Total	27.5	52.5	90.9%

that would otherwise be available for uses such as consumption or civilian investment. With defense investment up, it is probable that civilian investment is down, so GNP itself appears to be in for trimming in both absolute level and growth rate, according to State Dept. economist Herbert Block. He suspects that this adjustment will trim annual GNP growth by 0.5% to 1%.

In addition, the 25 billion rubles of additional defense spending that the CIA has discovered is equal to nearly 25% of previous estimates for total capital expenditures in the Soviet economy. So

A covert operation to get classified Soviet documents left the CIA people dazed

if, as some suspect, a large part of the overlooked military expenditures were mistakenly being counted as investment, a great deal of theorizing about the excessive capital intensity and sluggish productivity of the Soviet Union's centrally planned economy may also be in need of amendment. On this point, Block says that the revision "may mean that civilian investment is slightly more productive. This raises so many questions on productivity that the knot can't be untangled quickly." Says Abram Bergson of Harvard University, probably the ranking U.S. expert on the Soviet economy: "A revision of this sort is very disconcerting. It raises the question of whether this will be the last revision, or will there be more. I think preliminary is a term very much in order in this particular area."

Questions over the revision have forced some economists to doubt just how good the CIA's economics can ever be. Says Bergson: "The basic fact you have to keep in mind is that the calculations must proceed on very meager material. Inevitably, there's a very large margin of error."

The distortions. Since a 1967 reorganization, the CIA's Soviet work has been apportioned between two distinct offices. And in the CIA's Office of Economic Research, where about 40% of the staff of hundreds concentrates on the economies of the Communist countries, most experts believe that the estimates produced for broad economic aggregates have been kept within a tolerable margin for error. Since data bearing on GNP and similar measures are not classified by the Russians, the OER relies heavily on published Soviet sources. But even here, data are incomplete and subject to considerable distortion because of allegedly faulty Soviet collection procedures and the existence of incentives encouraging misrepresentation by plant managers and other bureaucrats. So wherever possible, the OER works from raw data on the physical volumes of

production of individual products, using these to create indices of real GNP by industry.

But the Soviet national accounts are based on a Marxian concept, net material product, which is narrower than the Keynesian framework of GNP familiar in the West. Earnings of military personnel and those in many of the personal service industries do not enter into the Russian concept. To fill the gaps, the OER must obtain data on ruble outlays for such sectors and then deflate them with its own price indexes.

But the OER's acts of approximation pale beside the feats of statistical daring performed by the agency's Office of Strategic Research, the more highly classified shop that attempts to reconstruct the ledgers of the Defense Ministry.

The State Dept.'s Block has described research on Soviet defense as "an exercise in meta-Intelligence. Analysts engage in the exegesis of obscure texts, guess at unexplained residues, hunt after



Lee: He charges that even the revised estimates of Soviet strength are low.

analogues, and indulge in assumptions." And in the last analysis, all that systematic intelligence assessments can attempt to do is shed a sort of oblique light on the fundamental military question, which is "combat effectiveness." There will probably never be a way of deciding whether one military establishment is really "better" than another without resorting to the traditional test—war.

The assessments. The CIA employs two basic approaches to the comparative measurement of competitive war machines: threat assessment and burden assessment. Usually, these two approaches will disagree on the proportion by which one nation's defense program is "larger" than its competitor's; and it

may be that neither program is larger from both points of view. But the reasons that make such confusion possible are not military, they are economic. The threat assessment and the burden assessment will precisely coincide only when the two nations being compared have identical GNPs and identical relative price structures. In all other cases, each approach provides its own blend of military and economic considerations.

The "threat assessment" is simply an estimate of how much it would cost the U.S. to duplicate every aspect of the Soviet military establishment, while paying all personnel U.S. wage rates and making all purchases at U.S. prices. The question it answers is thus rather narrow: Is the U.S. defense effort as large as it would be if it simply matched every part of the Soviet effort?

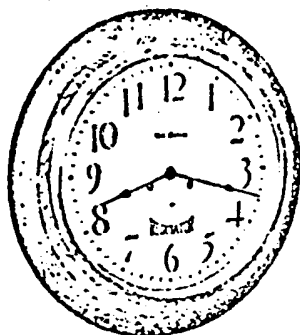
The alternative "burden assessment" attempts to cost the actual Soviet defense program at the prices and in the currency in which it is actually paid for—rubles. This figure can be compared directly with the Soviet GNP. The ratio of ruble military expenditure to ruble GNP, since it represents the share of total Soviet output that is diverted to military use, is called the military "burden."

What the CIA has suddenly decided is that the Soviet burden has actually been in the vicinity of 11% to 13% through at least the 1970-75 period. This is more than double the current U.S. figure and that of every nation in Western Europe. During the entire postwar period, the U.S. burden has reached this range only once, standing at about 13% during two years of the Korean War.

The ratios. The CIA begins its estimation of Russia's military burden by attempting to price each of the items in the Soviet arsenal. Over the years of compiling threat assessments, it has built up a stock of dollar value estimates for the hardware the Soviets are known to have. But these dollar estimates must be translated into rubles for use in the burden assessment. For this purpose, the OSR maintains a long list of ruble-dollar conversion ratios, each of which is considered appropriate to defense items of various specific types. Owing to the scarcity of weapons data, though, most of these ratios between the ruble and dollar prices of comparable industrial products are largely based on the prices of technologically related civilian goods. In some cases, moreover, there is not a close fit between Soviet and U.S. civilian items, so the dollar cost used to calculate the conversion ratio will itself be only an estimate of what an article of given specifications would cost if it were produced in the U.S.

Finally, the OSR's last full-scale compilation of Soviet civilian goods prices was based on the price reform of 1955, meaning that today's ruble-dollar con-

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version ratios incorporate the errors accumulated in the course of 20 years of updates reflecting estimated Soviet civilian price trends. The OSR is now completing an overhaul based on price manuals issued by the Russians following the price reform of 1967. Books covering the more recent reform of 1975 are not yet, and may never be, available. Obviously, the ruble-dollar conversion process does expose the OSR defense spending estimates to a considerable potential for error.

In fact, the CIA would undoubtedly like to believe that every bit of its 280%-or-more underestimate of Soviet procurement and construction outlays was due to the use of ruble-dollar conversion ratios that were much too low, and that all of the errors in these ratios were due to an exaggerated sense of the Soviet defense production sector's efficiency relative to Soviet civilian industry. This would mean that its civilian sector pricing was basically sound, and that only the burden estimate would be affected. Soviet weaponry was in no

Higher defense spending cut estimates of Soviet GNP growth by 0.5% to 1%

sense underestimated, according to this view, but only the resources the Soviets had to use to produce these weapons.

The implication. Experts do agree that the CIA's ruble-dollar errors were serious. But the question remains as to just how much of the CIA's revision, particularly in weapons procurement, can be accounted for by the agency's retreat on this particular issue. As exemplified by the testimony of CIA Deputy Director for Intelligence Edward Proctor to last year's Proxmire subcommittee, the entire CIA revision process amounts to this: "What we have come to is a realization that the Soviet military production complex is about half as efficient as we thought, and much closer to the civilian efficiency." While embarrassing enough, this disclosure can only account for a 100% increase in estimated procurement costs. The problem with this approach, therefore, is that the agency has actually raised the procurement estimate by about 300%. To generate that much error, the CIA would have to discover that Soviet defense industry is only one quarter as efficient as had been thought. But this would have the rather novel implication that it is actually the civilian sector that is twice as efficient as defense production. No one, including the CIA, would go that far.

Some CIA spokesmen press the further explanation that since the agency's overly generous appraisals of Soviet efficiency were concentrated in higher technology weapons, the CIA's pricing error swelled over time—the typical weapons

became more complex and, they say, Russian industry fell increasingly far behind U.S. efficiency while the whole spectrum of technologies advanced.

But the CIA's 1976 congressional exhibits actually imply that the Russians adapted slightly more efficiently than the U.S. to 1970-75 changes in weapons complexity. Steven Rosefielde, professor of Soviet economics at the University of North Carolina, does think the CIA's error was particularly bad in high-technology areas but still believes much of the error is unexplained by technology. As for the idea of a growing U.S. efficiency advantage over the Soviet Union, he says, "There is no evidence of that occurring."

As a result of the apparent inadequacy in the CIA's attempt to account for its error, some experts feel that other mistakes have contributed to underestimating the Soviet procurement outlays. There are three possibilities:

- The CIA correctly estimates quantities and qualities of Soviet weapons, but underestimates what their production costs would be for U.S. industry. If the CIA now admitted this kind of error, Defense Dept. arguments for higher budgets might become more strident, since a higher level of U.S. spending would appear to be called for from the point of view of matching the Soviet effort. But no change in the estimate of the quality, quantity, or combat effectiveness of Soviet arms would follow. "This is undoubtedly a major part of the CIA's error," says William T. Lee, an independent consultant on Soviet affairs and 11-year veteran of the agency.

- The CIA correctly estimates the quantities of the various Soviet weapons, but does not have complete information on their quality and complexity, and therefore underestimates their costs. For example, it was not until the Israelis captured large numbers of armored vehicles during the 1973 war that the CIA discovered that such Soviet vehicles have for several years been equipped with costly ventilating and other devices to foil nuclear, chemical, and biological warfare contamination. Oversights of this kind affect both ruble and dollar estimates of Soviet defense spending. More important, they involve the disclosure of greater Soviet military capabilities than were previously suspected.

- The most fundamental possibility that would have contributed to the CIA's sudden discovery that the Soviet Union has been spending four times as much on armaments as had been thought is that they simply have been producing more of those armaments than the agency realized. Like incomplete quality information, this kind of miss would affect all three dimensions of the Soviet military establishment: ruble burden, dollar threat, and combat effectiveness. For

the CIA to disprove this possibility conclusively by documenting the extent of its efficiency-type errors would require years of exhaustive research—or another intelligence breakthrough of unprecedented proportions.

Most Soviet experts do not place great weight on the possibility that the Soviet Union's arsenal is bigger than the CIA believes it to be. Still, economist Rosefielde acknowledges a lingering uncertainty. "I don't know why they're so sure they're right on the number of weapons," he says, "but everyone says so."

But Rosefielde, like others, places greater emphasis on the likelihood that quality underestimates may have loomed large in the CIA's goof. One high government official outside the CIA says that the agency's real mistake was in think-

Big question: Does Russia have an even better arsenal than the CIA admits?

ing "the Russians were primitive, underdeveloped, not very sophisticated." While the agency says that its revision amounts to no more than a downgrading of Soviet defense sector efficiency, the same official says flatly that "by far the greatest majority" of the revision reflects an upgrading of the presumed complexity and performance capabilities of the weapons being turned out by the Soviet defense sector. In other words, costs may be higher in part because weapons quality is higher and not because efficiency is lower.

The information gap. A similar view was advanced last June when the CIA unveiled its revision and its preferred explanation. Lieutenant General Samuel V. Wilson, director of the DIA, refused at two different points to second the CIA's stress on new-found inefficiencies in the Soviet defense industry. "I am not sure enough to buy the additional adjectives, 'far less efficient' than we had earlier believed," he said during one exchange. "I have a feeling that they [the CIA] are ascribing more significance to it than I would." Clearly, Wilson does not have in mind 300% worth of inefficiency.

So the fact is that the revision, rather than reflecting a more detailed understanding, may just paper over a profound information gap. At this point, then, the CIA's revision has a dual significance: U.S. policymakers now know that the Soviet Union has devoted a greater effort to armaments than was previously thought and that it is a lot harder to estimate this effort accurately than was previously thought. This carries the further implication that the Soviet Union may have more and better weapons than the CIA has yet acknowledged. This does not close the book on détente but it means the fine print must be studied more cautiously.

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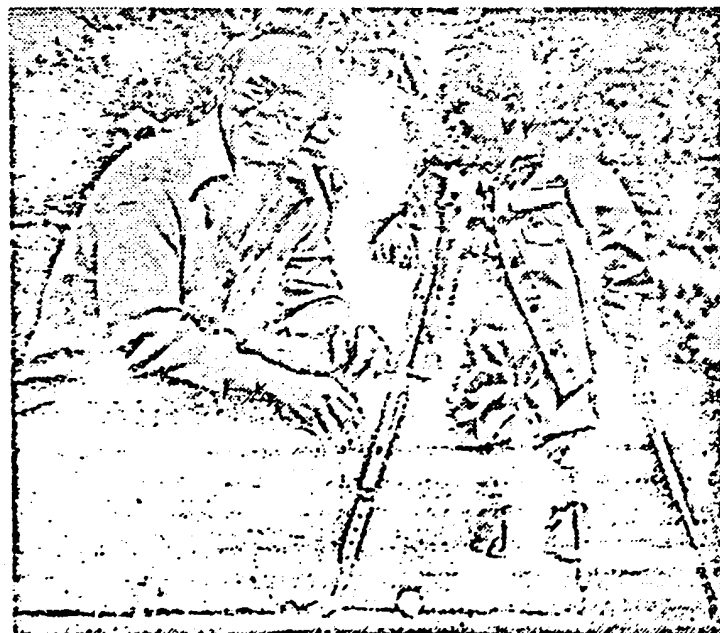
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